

Reconsideration of the above-identified application is respectfully requested in view of the followings remarks.

REMARKS

In view of the reopening of the prosecution by the Examiner, this amendment is submitted under 37 CFR 1.1111.

Specifically, claim 1 has been amended to define the interference effect pigment reactor as a reactor capable of coating a hydrous layer onto a platy substrate. Support for the limitation is believed to be expressly set forth at page 1, line 22 – page 2, line 5 and Example 1. Further, claim 7 has been amended to state that the method is a continuous process, and that the pigment preparation is achieved by coating a platy substrate with a hydrous layer. Again, support for forming the pigment by coating a platy substrate with a hydrous layer is set forth as noted above at page 1, line 22 – page 2, line 5 and Example 1. Further, claim 7 has been amended by incorporating the limitations of original claim 11 to state that the coating of the platy substrate is terminated when the characteristic of the pigment matches the standard. This claim distinguishes over the prior art method of forming a pigment, filtering, calcining the sample, suspending the pigment in a carrier, coating a paper card with the sample, drying, and comparing the interference effects of the dried sample with the standard as described at page 5, line 25 – page 6, line 3. As stated at page 6, lines 3-5, the present invention eliminates these time consuming steps, as well as the inevitable delays which occur in the real world execution of the conventional processing steps.

Claims 3 and 5 have been amended to provide for the proper antecedents.

Claims 1-12 have been rejected under 35 USC 103(a) as being unpatentable over Falcoff et al. (U.S. 4,403,866) in view of Phillips et al. (U.S. 6,241,858). The Examiner states that Falcoff et al. discloses a process of making paints comprising an interference effect pigment reactor 13, a flow cell in communication with the reactor adapted to receive and orient a sample of pigment from the reactor, and a colorimeter interfaced with said flow cell for measuring the characteristics of the flow cell sample. The Examiner states that Falcoff et al. teaches it is possible to determine a spectral curve of a color with a spectrometer, but fails to disclose or fairly suggest using a goniospectrophotometer for evaluating the light reflected from the pigment of the flow cell. The Examiner applies Phillips et al. as disclosing a method and apparatus for producing an enhanced interference pigment wherein a goniospectrophotometer is used

for taking measurements. The Examiner concludes that in view of Phillips et al., it would have been obvious for a person of ordinary skill in the art at the time the invention was made to modify the teaching of Falcoff et al. to employ a goniospectrophotometer in lieu of the colorimeter for describing color shifting pigments. The Examiner states that such modification would make the system more effective wherein measurements would be taken at multi-angle geometry so that comparison of pigments is simulated to provide more accurate results. The rejection is respectfully traversed.

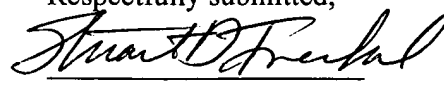
Importantly, Falcoff et al. does not disclose a reactor for forming an interference effect pigment. The vessel 13 of Falcoff et al. is a mixing vessel in which a liquid paint containing, for example, a binder solution and one or more pigment dispersions are introduced to form a liquid paint. Falcoff et al. is concerned with matching the color of a liquid paint with a standard, and is not remotely concerned with an apparatus or method of the present invention, which method is directed to coating a platy substrate with a hydrous layer to form an effect pigment and continuously monitoring the color achieved by the coated substrate so that the coating process can be continued or terminated depending upon whether a standard color has been met. Accordingly, Falcoff et al. fails to disclose not only the goniospectrophotometer of the claimed invention, but also the coating apparatus and coating method for forming a pigment as claimed. Falcoff et al. fails to disclose a reaction process, and is not remotely concerned with continuing or terminating that reaction process as claimed. The Examiner is correct that Falcoff et al. fails to disclose a goniospectrophotometer.

Direct application of a goniospectrophotometer to the measurement of a pigment during the reaction or coating process has not previously been done. To accurately measure the color of the effect pigment being produced by the coating process, the coated platy pigment particles must be properly aligned in the flow cell to achieve the desired measurement. Due to the size of the claimed flow cell, orientation of the pigment is achieved without the need to control the Reynolds number as in Falcoff et al. Phillips et al. discloses a goniospectrophotometer to evaluate the final pigment. The setup in Phillips et al. is well known in the art, and is described at the bottom of page 5, continuing through the top of page 6 of the instant specification, wherein a pigment sample is prepared, the coating process stopped, the pigment applied in a paint type binder, and the paint is then coated onto a substrate which is then evaluated. Upon evaluation, the reactor can then be restarted if the color of the pigment is not correct.

Thus, the Examiner has not shown where Phillips et al. discloses the continuous method as set forth in the claims. Further, it is important to note that Phillips et al. is specifically concerned with interference pigments, whereas Falcoff et al. is concerned with forming a liquid paint and controlling the color of the liquid paint, not the specific pigment which forms the paint. Specifically, Phillips et al.'s teachings regarding color management are not conducted while the pigment is being made by a coating apparatus or process. It is the monitoring of the color achieved by the pigment itself during formation of the pigment which is the essence of this invention and is a process not suggested in either of the applied references alone or in combination.

Again, Falcoff et al.'s patent covers a simple mixing process. Phillips et al. is directed to forming an interference pigment by a vacuum vapor deposition process, and is wholly unlike the process claimed and the paint mixing process of Falcoff et al. Accordingly, the combination of Falcoff et al. and Phillips et al. does not meet all the claim limitations, in particular a reactor which is directed to forming a slurry of a platy substrate and forming a coating on the substrate, nor would one of ordinary skill in the art be motivated to combine the two references since Falcoff et al. and Phillips et al. are concerned with measuring the color of two wholly different materials. Falcoff et al. is concerned with measuring the color of a liquid paint, whereas Phillips et al. is concerned with the non-continuous process of measuring the color of an interference pigment formed by vacuum vapor deposition. Accordingly, it is respectfully requested that the rejection is not proper, and applicants respectfully solicit favorable action on claims 1-10 and 12.

11/9/04
Date

Respectfully submitted,

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